

Ben I. Wales
(703) 456-8609
bwales@cooley.com

February 9, 2009

Stephen Gardner, Planner
Loudoun County Department of Planning
1 Harrison Street, S.E., 3rd Floor
P.O. Box 7000
Leesburg, VA 20177-7000



**Re: The Compass School, SPEX 2008-0042
Response to Second Referral Comments**

Dear Mr. Gardner:

This letter constitutes our response to the Staff and Agency second review comments that we have received to date regarding the above-referenced SPEX application. The Staff/Agency comments are addressed below. Each comment is summarized (noted in *italics*) and followed by our response.

Department of Planning

Comment: Building Placement and Design. Staff appreciates the inclusion of these design practices into the development and recommends that the applicant commit to them.

Response: Please see Sheet 4 of the SPEX Plat, which provides a front elevation for the proposed school. This Sheet had previously been included in the SPEX Plat, but was accompanied by a note setting out that the graphic was included for illustrative purposes only. This note has been removed from Sheet 4.

Comment: Staff defers to Zoning Administration regarding the modification to the requirement for pick-up and drop-off spaces. If the number of parking spaces is increased, staff requests the opportunity to evaluate the new submittal. Staff recommends that any additional parking spaces be permeable to minimize the increase in stormwater runoff.

Response: Comment acknowledged. No additional parking spaces have been requested by Zoning Staff.

Comment: Wetlands. The impact of the proposed uses on the drainage channel, the remaining wetlands, and the neighboring properties is unclear, largely due to a lack of information regarding the proposed elevations of the proposed uses. Staff reiterates recommendations from the First Referral that the applicant provide additional information regarding proposed elevations and changes to the site hydrology so that any impacts can be evaluated. Staff recommends that the applicant modify the project so that impacts to the remaining wetlands,

Stephen Gardner, Planner
February 9, 2009
Page Two

channel, and neighboring properties are avoided and so that the functionality of the remaining on-site and off-site wetlands is preserved.

Response: Comment acknowledged. Please see Exhibit A, which provides a conceptual grading plan for the Property and shows how the Applicant anticipates to ensure the preservation of existing wetlands within and adjacent to the Property. The Applicant anticipates constructing a retaining wall along the limits of clearing and grading on the Property's eastern boundary. This proposal is based on the retaining wall approved with the existing site plan for the Property. In terms of rate of flow, the Applicant anticipates only a minimum increase in the speed of flow. As such, the proposal would not result in flow outside of the existing easement and would not affect wetland or private property adjacent to the Property.

Comment: Landscaping and Buffering. Staff recommends that the applicant meet with the County Forester to review the plant materials, landscaping plan, and planting details. Staff also recommends that the applicant select plant species indigenous to the Virginia Piedmont region and commit to the landscaping plan.

Response: Please see the revised proposed conditions, which include a commitment to the use of plant species indigenous to the Virginia Piedmont region. The Applicant is unable to commit to the Landscape Plan on Sheet 3 of the SPEX Plat. The Landscape Plan was prepared to provide an illustration of the vegetation required by buffer yards being committed to by the Applicant. Therefore, the types of plants and trees shown on the Sheet must be provided, but the Applicant cannot commit to the specific locations shown on the Sheet. At the time of site plan, the Applicant will need to demonstrate that the plants and trees required by the various buffer yards (as demonstrated by Sheet 3) have been provided.

Comment: Stormwater Management. Staff appreciates the inclusion of permeable paving in the project and recommends that the applicant commit to the installation and maintenance of the permeable paving.

Response: Please see proposed Condition 10, which has been revised to confirm that pervious surfaces used for parking areas will be maintained.

Comment: Bicycle & Pedestrian Circulation. Staff appreciates the inclusion of these facilities in the project design. To ensure access in all directions to the local sidewalk network, staff recommends that sidewalks be constructed on both sides of the driveway and that the applicant commit to the installation of the depicted bicycle and pedestrian facilities.

Response: The Applicant believes that a second sidewalk connection into the Property is both unnecessary and would generate safety concerns.

As shown on the SPEX Plat, the Applicant has proposed a sidewalk connection on the southern edge of the Property's entrance. This connection would be linked to a sidewalk proposed for the eastern edge of Navajo Drive (north of the Property's entrance) by a crosswalk across the

A-72

Stephen Gardner, Planner
February 9, 2009
Page Three

Property entrance, thereby providing pedestrian access to the proposed school from sidewalks to the north and south of the Property.

The proposed sidewalk shown continuing into the Property would be connected to the school's entrance via a crosswalk across the parking lot (as shown on the revised SPEX Plat). The Applicant believes that a sidewalk on the northern edge of the Property entrance would be difficult to connect to the school's entrance. Such a connection would need to traverse an area of the parking lot where vehicles could be approaching from four directions and the Applicant would be concerned with the safety of people, particularly young children and parents with young children, using such a crossing.

In addition to the Applicant's concerns that a second pedestrian and bicycle connection would not be necessary or safe, the Applicant also notes that a second sidewalk connection would reduce the amount of pervious surfaces on the Property.

Virginia Department of Transportation (VDOT)

Comment 1: Our previous Comment 1 has not been satisfactorily addressed. Even though the width of the right-of-way is consistent with the previous applications the road width is not. The typical section/configuration of Navajo Drive was discussed and agreed upon with other VDOT agencies previously and therefore should be implemented accordingly

Response: The Applicant acknowledges that the SPEX Plat previously showed the width of Navajo Drive as 38 feet wide. This reflected a width shown on the approved site plan for the Property. The Applicant now believes that the width shown in the site plan was incorrect and should have been 40 feet, which was the width shown on the SPEX Plat previously approved for the Property. The Applicant has revised its SPEX Plat to show a typical section of Navajo Drive being 40 feet in width.

Comment 2: Our previous Comment 2 has not been satisfactorily addressed. Why is the AM peak hour volume so low? Will this facility be not operating during this peak hour?

Response: Please see the memorandum prepared by Gorove/Slade and Associates, dated January 22, 2009.

Comment 3: What is the reason for keeping the existing road reservation? What is this reservation for?

Response: The existing reservation is not on the Applicant's Property and is not required by the proposed use or its access. Access to the Property will be achieved using an existing access/egress easement over land owned by the Ashbrook HOA. The Applicant is unaware of the purpose of the reservation, but is happy to provide a copy of the deeds for the Property should Staff seek further information.

A-73

Stephen Gardner, Planner
February 9, 2009
Page Four

Building & Development, ERT

Comment: Per Section 5-609(2)(b) a designated pickup and delivery zone, providing at a minimum one (1) parking space per twenty (20) children is required in addition to the required spaces per 5-1102. The applicant is requesting a Minor Special Exception that incorporates the delivery zone into the required parking per Section 5-1102.

Response: Comment acknowledged.

Comment: While Staff does not disagree with the applicant's justification for the reduction, it appears the need for the reduction is due to the increased size of the building. Staff is still not clear why the building size needs to be increased.

Response: The proposed building size has been calculated based on The Compass School's curriculum and teaching style. The Compass School offers a project-based approach to education, inspired by the Reggio method of educating the very young. The curriculum focuses more on encouraging children to question, discover, test and exhibit ideas rather than providing them with specific answers and incorporates student's interests and curiosity in lesson planning. Unlike the layout of the approved building at the Property, the Compass curriculum incorporates rooms specific to its program and includes more gathering spaces than found in a typical child care facility.

The Applicant is not seeking to provide space within the child care facility to accommodate additional children or staff; it merely wishes to provide the number, size and types of classrooms and gathering places required by The Compass School's curriculum and teaching style. Further, the Applicant has demonstrated that its facility will use significantly less parking than required by the Zoning Ordinance; if a smaller building was being proposed, the proposed parking reduction would still be appropriate.

Comment: The applicant's justification for requesting a Zoning Modification of Section 5-1414(B) buffer yard identifies the existing vegetation located on the Ashbrook Homeowners Association open space to provide additional screening and buffering between the residential properties and the Compass School. The applicant should provide a detail of the existing vegetation located between the Compass School and the residential properties which are adjacent to the Ashbrook Homeowners Association open space to demonstrate the adequacy of screening.

Response: The existing vegetation includes mixed emerging deciduous trees, Virginia cedars and an area of mixed mature deciduous trees. The Applicant believes that this vegetation will assist the Type 2 buffer yard required along the Property's eastern boundary to provide screening for the proposed school building. In addition to this existing and proposed vegetation, the Applicant also intends to discuss with the Ashbrook HOA whether additional screening would be appreciated. The Applicant anticipates providing any additional screening on open

A-74

Stephen Gardner, Planner
February 9, 2009
Page Five

space owned by the HOA and identified as 'Ashbrook Village SEC 1A, Parcel A' on the SPEX Plat. This open space lies to the east of the Property.

Comment: Staff recommends replacing all references to "pervious pavement" with "pervious surface" to provide flexibility in the surface type at the time of site plan.

Response: Comment acknowledged. This change has been reflected on the application materials.

Fire, Rescue & Emergency Management

Comment: The Fire and Rescue Planning Staff has no further comments.

Response: Comment acknowledged and appreciated.

Office of Transportation Services (OTS)

Comment: In its initial referral on this application OTS noted: Transportation related conditions in this application should be the same as the currently approved SPEX. This includes the location of the site entrance on Navajo Drive. This entrance location was a major issue in the consideration of the current SPEX. Assuming the site's entrance location is acceptable, there would be no transportation issues which preclude approval of this application.

OTS examined the location of the entrance as shown on STPL 2006-0065 (Patriot Learning Center) and SPEX 2005-0005 (Busy Kids). The entrance location for this application is the same as shown on the previous two applications. This issue is resolved.

Response: Comment acknowledged and appreciated.

Comment: Please note the applicant should also address VDOT's comment number 1 which pertains to improvements to Navajo Drive between the site entrance and Russell Branch Parkway including a sidewalk and curb ramps.

Response: Comment acknowledged. The VDOT referral comments have been addressed above.

Comment: OTS also reviewed an October 10, 2008 letter from Gorove/Slade Associates responding to VDOT comments dated September 9, 2008. We agree with the consultant's conclusion that there is no need for right or left turn lanes. We also agree with the results of the queuing analysis with respect to entrance location.

Response: Comment acknowledged and appreciated.

A-75

Stephen Gardner, Planner
February 9, 2009
Page Six

Comment: OTS further reviewed the consultant memo of November 6, 2008 which was an on-site parking reduction study in support for a reduction of 82 spaces to 73 spaces. We would appreciate receiving the B&D zoning response to this memo.

Subject to the B&D Zoning determination of adequate on-site parking and the applicant adequately addressing VDOT's comment number 1 in their December 16, 2008 referral, OTS would not object to the approval of this application.

Response: Comment acknowledged and appreciated.

I trust that this letter addresses the various issues raised by Staff. Please contact me if you have any additional questions or need any additional information.

Sincerely,



Ben I. Wales, AICP

cc Lynne Geisz, Childcare Holdings, Inc.
Rohit Anand, Cubellis
Patricia Mao, Cubellis
Colleen Gillis Snow, Cooley Godward Kronish

390110 v1/RE

A-76



MEMORANDUM

TO: Rashid Siraj, P.E.

VDOT

CC: Art Smith

Loudoun County

FROM: Christopher Tacinelli, P.E.
Tushar Awar, P.E.
Pooja Bhagia

DATE: January 22, 2009



SUBJECT: Response to Comments for Ashbrook - Compass School (Formerly Patriot Learning Center) Loudoun County Application Number: SPEX 2008-0042

This document addresses the comments received for the Compass School (Formerly Patriot Learning Center) Loudoun County Application Number: SPEX 2008-0042. Each comment is presented in *italics* with the response in **bold** immediately following.

COMMENTS:

- 1) Our previous Comment 1 has not been satisfactorily addressed. Even though the width of the right-of-way is consistent with the previous applications the road width is not. The typical section/configuration of Navajo Drive was discussed and agreed upon with other VDOT agencies previously and therefore should be implemented accordingly.*

Response by others

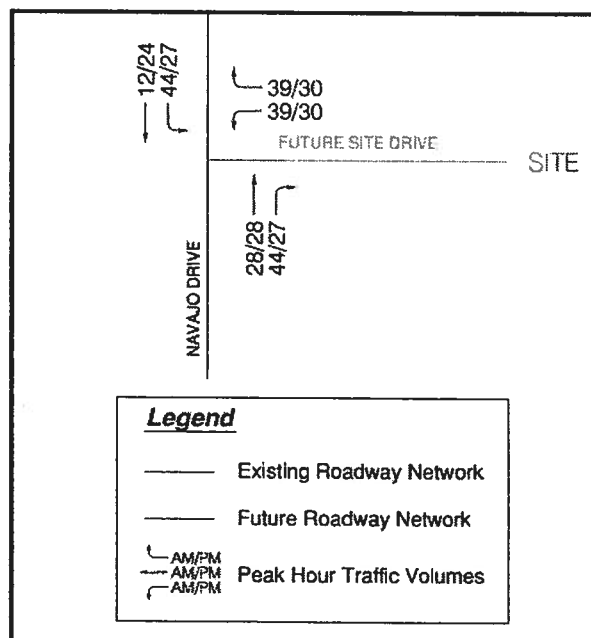
- 2) Our previous Comment 2 has not been satisfactorily addressed. Why is the AM peak hour volume so low? With this facility be not operating during this peak hour?*

A discussion was held with the VDOT reviewer to understand the reasoning behind comment # 2. The discussion revealed that the reviewer implied that there should be more traffic generated by the proposed day care center from the south along Navajo Drive. The traffic study had assumed 5% of the site-generated traffic approaching the site from the

south along Navajo Drive.

The response has been summarized below:

- A scoping meeting with Loudoun County OTS staff was held wherein the site traffic distribution assumptions were agreed upon.
- The second referral comments provided by OTS implicate that OTS agrees with the site traffic distribution and the right turn lane analysis results (right turn lane is not required in the northbound direction along Navajo Drive).
- However, to be conservative, a revised analysis was conducted assuming 50% of the site-generated traffic approaching from the south along Navajo Drive and 50% from the north.
- The right turn lane, capacity and queuing analysis were revisited for this scenario.
- The results show that a right turn lane is still not warranted in the northbound direction at the site entrance even for the worst-case scenario. The intersection operates at acceptable levels of service and there are no queuing issues. The results of the queuing and capacity analysis are presented on the following pages. The Synchro worksheets are attached at the back of the memorandum.
- The projected volumes also reveal that a right turn lane will not be required in the northbound direction even if we assume 100% of the site generated traffic approaching from the south and a taper will not be required even if we assume 70% of the site traffic approaching from the south along Navajo Drive.
- The revised future with development (2010) traffic volumes for this scenario are shown below:



Right Turn Lane Warrant Analysis (2-LANE):

Worst Case Scenario with 50% of site generated traffic approaching from the south along Navajo Drive

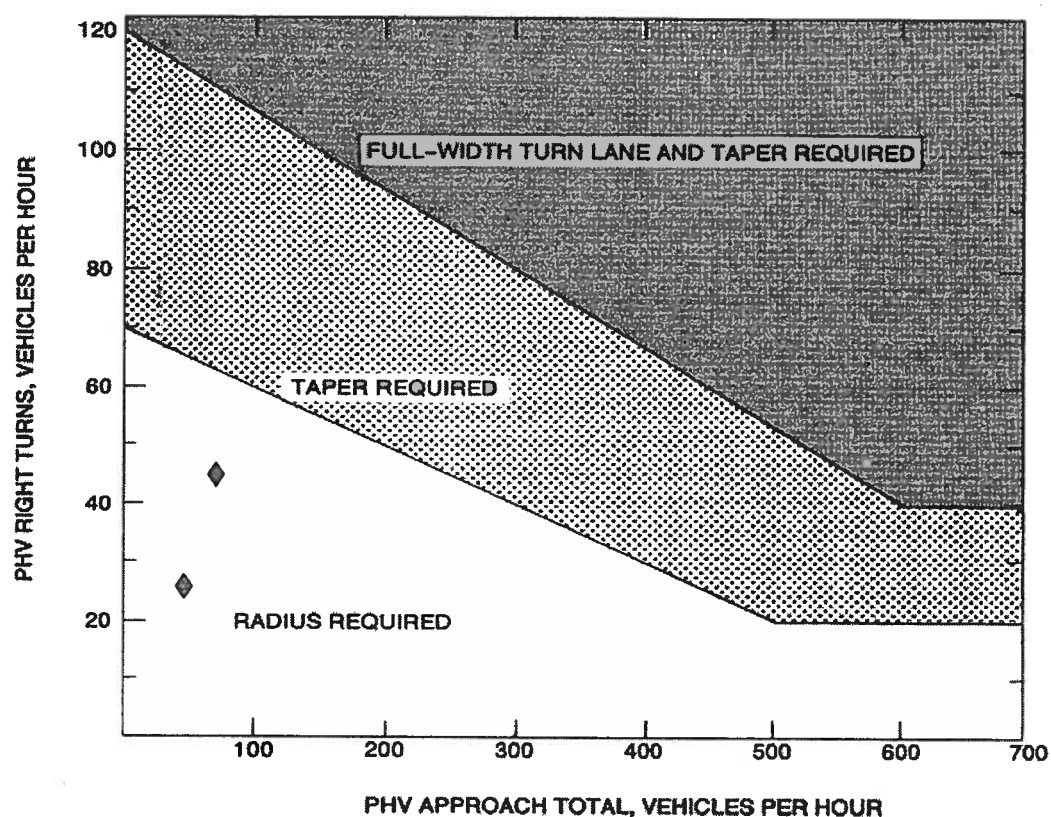
NAVAJO DRIVE AND FUTURE SITE ENTRANCE (2010 - FUTURE CONDITIONS)

AM Peak Hour

Right Turn Volume = 44 veh/hour
 Approach Volume = 72 veh/hour

PM Peak Hour

Right Turn Volume = 27 veh/hour
 Approach Volume = 55 veh/hour



Right Turn Lane Not Required.

Table 1: Total Future (2010) Analysis

Worst Case Scenario with 50% of site generated traffic approaching from the south along Navajo Dr.

Intersection (Approach/Movement)	AM Peak Hour			PM Peak Hour		
	LOS	Delay	Queue	LOS	Delay	Queue
Navajo Drive and Site Entrance						
Overall (Unsignalized)	N/A	N/A		N/A	N/A	
Westbound	A	9.3	7'	A	9.1	2'
Southbound (Left)	A	5.9	5'	A	4.0	1'

N/A: Not Applicable, Queue is in feet










3) *What is the reason for keeping the existing road reservation? What is this reservation for?*

Response by others.

SYNCHRO WORKSHEETS

HCM Unsignalized Intersection Capacity Analysis 5: Site Drive & Navajo Dr

Compass School

									
Movement	WBL	WBR	NBT	NBR	SBL	SBT			
Lane Configurations									
Vol m (veh/h)	39	39	28	44	44	12			
Sign Control	Stop		Free			Free			
Grade	0%		0%			0%			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Hourly flow rate (vph)	39	39	28	44	44	12			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type			None			None			
Median storage (veh)									
Upstream signal (ft)									
pX, platoon unblocked									
vC conflicting volume	150	50			72				
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	150	50			72				
tC, single (s)	6.4	6.2			4.1				
tC, 2 stage (s)									
tF (s)	3.5	3.3			2.2				
p0 queue free %	95	96			97				
cM capacity (veh/h)	818	1018			1528				
Direction, Lane #	WB 1	NB 1	SB 1						
Volume Total	78	72	56						
Volume Left	39	0	44						
Volume Right	39	44	0						
cSH	907	1700	1528						
Volume to Capacity	0.09	0.04	0.03						
Queue Length 95th (ft)	7	0	2						
Control Delay (s)	9.3	0.0	5.9						
Lane LOS	A		A						
Approach Delay (s)	9.3	0.0	5.9						
Approach LOS	A								
Intersection Summary									
Average Delay		5.1							
Intersection Capacity Utilization		21.0%	ICU Level of Service	A					
Analysis Period (min)		15							










Total Future 2010
Timing Plan: AM

Synchro 7 - Report
Gorove/Slade

A.82

HCM Unsignalized Intersection Capacity Analysis 3: Site Drive & Navajo Drive

Compass School

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	30	30	28	27	27	24
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	30	30	28	27	27	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Left turn blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	120	42			55	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	120	42			55	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	97			98	
cM capacity (veh/h)	861	1029			1550	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	60	55	51			
Volume Left	30	0	27			
Volume Right	30	27	0			
cSH	938	1700	1550			
Volume to Capacity	0.06	0.03	0.02			
Queue Length 95th (ft)	5	0	1			
Control Delay (s)	9.1	0.0	4.0			
Lane LOS	A		A			
Approach Delay (s)	9.1	0.0	4.0			
Approach LOS	A					
Intersection Summary						
Average Delay		4.5				
Intersection Capacity Utilization		19.6%		ICU Level of Service		A
Analysis Period (min)		15				

This page intentionally left blank.

Ben I. Wales
(703) 456-8609
bwales@cooley.com



November 14, 2008

Stephen Gardner, Planner
Loudoun County Department of Planning
1 Harrison Street, S.E., 3rd Floor
P.O. Box 7000
Leesburg, VA 20177-7000

**RE: The Compass School, SPEX 2008-0042
Response to First Referral Comments**

Dear Mr. Gardner:

This letter constitutes our response to the Staff and Agency first review comments that we have received to date regarding the above-referenced SPEX application. The Staff/Agency comments are addressed below. Each comment is summarized (noted in *italics*) and followed by our response.

Community Planning

Comment: Staff recommends that the applicant provide a detailed inventory of the uses, including retail and service uses, within a 1,500-foot radius of the proposed childcare center. The applicant should also explain how the proposed use will serve the Business Community.

Response: The Ashbrook area has been developed with a range of uses appropriate to the Business Community designation provided by the Revised General Plan. These uses include office and light-industrial with retail and service uses between Route 7 and Russell Branch Parkway. The area to the south of Russell Branch Parkway has been developed with residential uses.

The application property (the "Property") was identified for a childcare facility in the initial masterplan for Ashbrook and has been special exception approval for such a use. This approval may be implemented at anytime up until March 2011. The Applicant is seeking to modify this approval to allow a Compass School on the Property and as such, does not believe that the detailed inventory suggested by Staff is necessary.

The Applicant believes that the proposed use will not only serve surrounding residents, but will also serve employees of business in the Business Community. The Applicant believes that the existing use complies with the Revised General Plan ("RGP"), which suggests that a mix of uses in the Business Community creates an environment where individuals can not only work, but where they can live and have convenient access to shops and services. A childcare center will be an important service to residents and employees of Ashbrook.

Stephen Gardner, Planner
November 14, 2008
Page Two

Comment: Staff recommends that the applicant commit to a building placement and design that addresses the issues raised in the Revised General Plan and Retail Plan to include:

- o Rooflines, materials, window arrangement, sign location, and architectural details compatible with the surrounding buildings;*
- o Usable outdoor spaces and amenities for employees and children, such as shaded benches and picnic tables;*
- o Building recesses, off-sets, angular forms, or other features;*
- o Distinctive roof forms; and*
- o Weather protection over the front walkway.*

Response: Attached to this letter as Exhibit A is an indication of the proposed design and appearance of the proposed Compass School building (please note that as shown on Sheet 4 of the SPEX Plat, the proposed facility would not have a high wall along its frontage). The Applicant believes that the proposed building is compatible in location, size and design with surrounding buildings and will compliment properties in Ashbrook. The Applicant has proposed a high quality building, using materials consistent with those found on Navajo Drive and with distinctive, yet compatible roof and window designs. Further, the proposed building layout and design has been discussed with the Ashbrook Home Owners Association ("HOA"), which confirmed that it favored the proposed facility over that currently approved.

The proposed childcare center will include 15,000 square feet of useable outdoor space and amenities. As confirmed in the proposed development conditions, this area will include a minimum of three benches.

The Applicant is not proposing weather protection over the front walkway, but the building will include a covered foyer/vestibule, which can be used as a waiting area.

Comment: Given the extent of the proposed use, the requested modifications, and the proximity of residential uses, additional details are needed to determine whether the use is compatible with the surrounding residences. Staff recommends that the applicant commit to a landscape plan and provide grading and planting information, as described above, with special attention to the project's visual impact. Elevations and plantings should be planned so that parking is screened and views of the use are softened from the residences.

Response: Please see Sheet 3 of the SPEX Plat, which has been revised to include proposed landscaping. The Landscaping Plan indicates that substantial planting will be provided around the perimeter of the Property, which will provide screening for the building from surrounding properties. As discussed above, this planting will be supplemented along the western boundary of the Property to provide additional screening. Further, the Applicant is proposing to locate the required play area at the southern edge of the Property, closest to the majority of the surrounding residential properties. This play area will be surrounded by a 6 foot high opaque fence, with landscaping provided on the outside of the fence. This will provide additional screening from surrounding uses.

A86

Stephen Gardner, Planner
November 14, 2008
Page Three

In addition to the proposed opaque fence, further screening will be provided along the eastern edge of the Property by existing vegetation in the area of open space owned by the Ashbrook HOA, which separates residential lots from the application Property.

The Applicant is proposing landscape islands throughout the parking lot, which, along with perimeter plantings, will help screen parking areas.

Comment: Staff recommends that the applicant consider employing LID facilities on-site. Staff recommends water treatment measures that mimic the pre-development conditions of the site, mitigate impacts to the watershed, and treat the stormwater runoff as an amenity. The applicant should consider various site measures, such as permeable pavers, porous concrete, cisterns, planted swales, curb cuts, rain gardens, and bioretention filters adjacent to impervious areas, to promote infiltration on-site, minimize peak storm flows, and help filter non-point source pollutants. Pipe installation should be minimized.

Response: Despite the small size of the Property, the Applicant is proposing the use of porous paving on 44 of the associated parking spaces. This equates to more than half of the proposed spaces and will provide for significant infiltration on-site. Further, the surfaces used in the 15,000 square foot play area will comprise grass and wood chip, which will allow for further on-site infiltration. The Applicant believes that the combination of these measures will allow for significant mitigation of impacts to the watershed. Finally, as set out on the SPEX Plat, the Property's SWM and BMP requirements are already being accommodated by a large pond constructed as part of the Ashbrook Development.

Comment: Staff recommends that the applicant commit to the installation of pedestrian connections to the existing sidewalk along Navajo Drive, safe crossing facilities across the driveway, and crossing facilities to the commercial area on the north side of Russell Branch Parkway. All pedestrian facilities, including those within the site, should be depicted on the proposed plat. Staff also recommends that all bicycle and pedestrian facilities be constructed in accordance with County policies, AASHTO, and ADA.

Response: As shown on the revised SPEX Plat, the Applicant is proposing a sidewalk connection from the Property to existing sidewalks on Navajo Drive and trails on Russell Branch Parkway. The sidewalks on Navajo Drive will be connected by a proposed crosswalk across the Property's entrance.

As shown on the revised SPEX Plat, the Applicant is also proposing a crosswalk to provide pedestrian connection from Navajo Drive and the childcare facility across Russell Branch Parkway to the adjacent retail area. This will be the only crossing in close proximity to Navajo Drive and will be an important facility for residents of Ashbrook.

Comment: Staff recommends that the applicant commit to a lighting plan and provide assurances that lighting will be fully shielded, provide a glare-free environment, be confined to the site, and turned off after business hours, unless required for security purposes, and that illumination levels will be no greater than necessary for a light's intended purpose. All lighting

A-87

Stephen Gardner, Planner
November 14, 2008
Page Four

should be designed to preclude light trespass onto adjoining properties, glare to passersby, skyglow, and deterioration of the nighttime environment.

Response: The Applicant appreciates that a lighting plan was submitted for the current special exception approval for this Property, but does not feel that such a plan is necessary. As set out in the proposed development conditions, the Applicant is willing to commit to cut-off and fully-shielded lighting to prevent light trespass and will power down lighting when the building is not in use. These are the same commitments included in the existing development conditions covering the Property.

Comment: Staff recommends that the applicant modify the project so that the functionality of the on-site and off-site wetlands is preserved. The applicant should provide additional information regarding proposed changes to the site hydrology so that any impacts can be evaluated. For any impacts to on-site resources, staff recommends mitigation on-site, within the same watershed, and within Loudoun County.

Response: As discussed above, special exception approval has already been granted for a childcare facility at the Property. This application has been carefully designed to fall within the same boundary as that of the existing approval so as to prevent any further impacts above those previously anticipated. A Virginia Water Protection Permit has previously been granted for the Property, which provides for the impact to palustrine forested wetlands at the Property from the development of a childcare facility. The permit confirms that losses must be compensated through the purchase of wetland credit from the Cedar Run Wetlands Bank at a mitigation to loss ratio of 4:1. This permit is valid until April 2014.

Comment: Staff recommends that the applicant consider sustainable design measures that could be incorporated into the project site and building. Staff suggests that the applicant consider committing to the LEED Rating System.

Response: Due to the size of the proposed building and costs associated with securing LEED accreditation, the Applicant does not believe that it would be appropriate to commit to the LEED Rating System. However, as set out in the proposed development conditions, the Applicant has proposed a number of sustainable design measures, which will be employed in the construction and operation of the proposed building.

Loudoun Water (formerly LCSA)

Comment: No outstanding issues.

Response: Comment acknowledged and appreciated.

A-88

Stephen Gardner, Planner
November 14, 2008
Page Five

Virginia Department of Transportation (VDOT)

Comment: This application has been reviewed under different names, i.e. Busy Kids (SPEX 2005-0005/ZMOD 2005-0007) and Patriot Learning Center (STPL 2006-0065); and should comply with all comments offered previously. This includes widening of existing Navajo Drive, provision for a five-foot (5') sidewalk and curb-ramps at the proposed entrance. The applicant should refer back to all the previous plans and ensure that the proposed frontage improvements are reflected on this application also.

Response: Comment acknowledged. The proposed SPEX Plat shows that land has previously been dedicated for the widening of Navajo Drive. The SPEX Plat has been revised to show the provision of a four-foot sidewalk and curb-ramps at the proposed entrance to the Property. The proposed sidewalk will be an extension of the existing sidewalk on the eastern edge of Navajo Drive.

Comment: The projected traffic volume (ADT) for existing Russell Branch Parkway and Navajo Drive should be shown on the plan. It appears that turning lanes (right and left) may be warranted at the proposed entrance.

Response: Please see that attached Memorandum prepared by Gorove/Slade and dated October 10, 2008.

Comment: It also appears that the entrance is located too close to the intersection and should be moved as far back as possible to ensure adequate queuing entering the facility from Russell Branch Parkway during AM peak hours.

Response: Please see that attached Memorandum prepared by Gorove/Slade and dated October 10, 2008.

Building & Development, ERT

Comment: Note 6 on Sheet 1 references approved wetland permit WP4-07-0612. Please provide a copy of the permit for staff to review. The note states that wetland impacts are compensated with mitigation credits from the Cedar Run Wetlands Bank. The referenced bank is located in Prince William County and therefore is inconsistent with Policy 23 on Page 5-11 of the Revised General Plan (RGP), which states that "the County will support the federal goal of no net loss to wetlands in the County." Furthermore, the County's strategy is to protect its existing green infrastructure elements and to recapture elements where possible [RGP, Page 6-8, Green Infrastructure Text].

Response: Please find the enclosed copy of the approved wetland permit at Exhibit B. The Applicant appreciates that the wetland impacts are compensated with mitigation credits from Cedar Run Wetlands Bank and that this facility is outside of Loudoun County. However, given the small area of wetland being disturbed by the proposal and the lack of potential for mitigation on-site, the Applicant is intending to implement the existing permit.

A-89

Stephen Gardner, Planner
November 14, 2008
Page Six

Comment: Based on the size of the parcel and existing wetlands, staff recommends that the applicant consider reducing the size of the facility and associated parking and/or reducing the footprint by constructing a two-story building. Staff does not support the proposed modifications to allow the building and parking to be located closer to the existing wetland area along the eastern boundary of the property, resulting in impacts. Staff recommends preservation of this jurisdictional feature. It is noted that the existing wetland area was designated for preservation as part of an earlier permit issued for the Ashbrook community (VWP 00-B0920). Not only is this area now being impacted, the compensation has been approved outside of the County, as described above.

Response: As Staff is aware, special exception approval has already been granted for a childcare facility at the Property. This application has been carefully designed to fall within the same boundary as that of the existing approval so as to prevent any further impacts above those previously anticipated. While the Applicant is seeking to locate the proposed building closer to the existing wetlands than the previous approval, it is not seeking to develop closer to the edge of the Property's eastern boundary: the approved and proposed layouts show development up to 29 feet from the Property's boundary. The Applicant has noted the existing wetland area designated for preservation on the SPEX Plat and does not seek to impact that area.

The proposed building design compliments surrounding development in Ashbrook and the Applicant does not believe that a two story building would be appropriate in this location, nor would it be appropriate for the proposed childcare use.

Comment: Pursuant to Section 6-1310(H) of the Revised 1993 Loudoun County Zoning Ordinance, the applicant must address whether the proposed special exception will impact water quality. Please provide information describing the stormwater management (SWM)/best management practice (BMP) approach for the proposed project. The previously approved special exception (SPEX-2005-0005) included onsite water quality treatment.

Response: Despite the small size of the Property, the Applicant is proposing the use of porous paving on 44 of the associated parking spaces. This equates to more than half of the proposed spaces and will provide for significant infiltration on-site. Further, the surfaces used in the 15,000 square foot play area will comprise grass and wood chip, which will allow for further on-site infiltration. The Applicant believes that the combination of these measures will allow for significant mitigation of impacts to the watershed. Finally, as set out on the SPEX Plat, the Property's SWM and BMP requirements are already being met by a large pond constructed as part of the Ashbrook Development.

Comment: Staff encourages a commitment in the design of the proposed childcare center to meet Leadership in Energy and Environmental Design (LEED) standards, as supported by the United States Green Building Council. With the second submittal, please include a LEED for New Construction or Core and Shell score sheet to indicate design commitments to site sustainability, water efficiency, energy and atmosphere, indoor air quality, efficient materials and resources use, and innovative design.

A90

Stephen Gardner, Planner
November 14, 2008
Page Seven

LEED recognizes site sustainability, conservation of energy and water, and indoor air quality, among other goals. The RGP also encourages these goals in the General Water Policies supporting long-term water conservation (Policy 1, Page 2-20); the Solid Waste Management Policies supporting waste reduction, reuse, and recycling (Policy 2, Page 2-23); and the Air Quality Policies supporting the creation of pedestrian and bicycle facilities (Policy 1, Page 5-41). Furthermore, as of April 15, 2008, the Board of Supervisors also endorsed LEED as the preferred green building rating system for commercial construction and recommended the "COG Regional Green Standard" for private development, as described on pages 11-12 of "Greening the Washington Metropolitan Region's Built Environment", available at <http://www.mwcog.org/environment/greenbuilding/>.

Response: Due to the size of the proposed building and costs associated with securing LEED accreditation, the Applicant does not believe that it would be appropriate to commit to the LEED Rating System. However, as set out in the proposed development conditions, the Applicant has proposed a number of sustainable design measures, which will be employed in the construction and operation of the proposed building.

Building & Development, Zoning

Comment: A Zoning Modification (ZMOD) application is necessary to process the proposed modifications.

Response: Comment acknowledged.

Comment: Please address conditions approved with SPEX-2005-0005 in relation to this application.

Response: Please see the enclosed proposed development conditions. These conditions have been created using those conditions approved with SPEX 2005-0005.

Comment: Remove the "site access only" notation in the Site Information table on sheet 1 of the special exception plat since parcel 084-30-7853, which provides access, must be included in this application. State the use in the table for this parcel as "open space and access to child care facility."

Response: Please see the revised SPEX Plat, which does not show Parcel F1 as being part of this application. As confirmed with Zoning Staff, an ingress and egress easement already exists for the entrance to the Property and so this Parcel does not need to be included in the application.

Comment: Update the General Notes to reference ZMOD-2005-0007 and SPEX-2005-0005.

Response: Please see the revised general notes, which confirm that the proposed SPEX Plat supersedes the SPEX Plat approved with ZMOD-2005-0007 and SPEX-2005-0005.

A.91

Stephen Gardner, Planner
November 14, 2008
Page Eight

Comment: Under Parking Tabulations please note that the 10 spaces required for drop off and delivery are in addition to the Section 5-1102 parking requirements as per Section 6-509(B)(2), therefore 82 spaces are required.

Response: The Applicant acknowledges that the Zoning Ordinance provides additional parking requirements for childcare facilities, but for the reasons set out in the Statement of Justification, does not believe these ten additional parking spaces are necessary for the proposed use. The Applicant, therefore, requests a minor special exception application to be processed concurrent with this SPEX/ZMOD application allow the removal of the requirement for the ten additional parking spaces.

Comment: Identify the correct front, side, and rear buffer yards. It is noted that buffers are shown going through the building footprint.

Response: Comment acknowledged. Please see the revised SPEX Plat.

Comment: Sheet 2 indicates an existing drainage easement in the rear of the proposed structure. Address whether the drainage easement will impact the proposed Type 2 buffer.

Response: The existing drainage easement will not affect the provision of the proposed Type 2 buffer.

Comment: Sheet 3. Indicate on "15' Type 2 Buffer Yard" label that this is a modification request.

Response: Please see the revised SPEX Plat.

Comment: Label the areas on Sheet 2 that are the subject of the requested zoning modifications.

Response: Please see Sheet 2 of the revised SPEX Plat.

Comment: Staff notes that a Special Exception (SPEX-2005-0005) was approved March 21, 2006, and the fact that the project was approved based on the Applicant's willingness to substantially reduce the size of the project from the original request. The Applicant is now requesting a 3,200 square foot increase from the previously approved Special Exception request.

Response: The Applicant is aware of the details concerning the existing approval on the Property. The existing approval received significant objections from the surrounding HOA and concerns from the Planning Commission and Board of Supervisors over the number of children proposed to be accommodated and issues relating to traffic generation and the location, design and layout of the childcare center. In response to these objections, the Applicant agreed to reduce the size of the proposed center from 13,861 square feet and reduce the number of children accommodated by the center from 250 to 200.

A.92

Stephen Gardner, Planner
November 14, 2008
Page Nine

The Applicant is proposing a one-story building totaling 13,168 square feet and is not seeking to increase the maximum enrollment above 200 children. Unlike many other childcare programs, The Compass School offers a project-based approach to education, inspired by the Reggio method of educating the very young. The curriculum focuses more on encouraging children to question, discover, test and exhibit ideas rather than providing them with specific answers and incorporates student's interests and curiosity in lesson planning. Unlike the layout of the approved building at the Property, the Compass curriculum incorporates rooms specific to its program.

As shown on Sheet 2 of the SPEX Plat, the building will be located along the Property's eastern boundary, with parking to the north and west and a play area to the south. In determining the size and layout of the proposed facility, the Applicant has arranged a number of meetings with residents of the surrounding Ashbrook community. These meetings have been well attended. At the meeting held on April 14, 2008, the surrounding community expressed their preference for the proposed SPEX amendment design, including increased square footage and revised site layout, over the existing SPEX approval.

Comment: Staff would like to note that it appears this Zoning Modification request is not needed because Section 4-505(B)(1) states no building, outdoor storage, areas for collection of refuse, or loading area shall be permitted closer than seventy five (75) feet to any agricultural district, any existing or zoned residential district, or land bay allowing residential uses and does not address play equipment.

Response: Comment acknowledged. The Applicant is aware that this modification was requested as part of the existing SPEX approval granted for the Property, but has removed the modification request from this application.

Comment: The Statement of Justification indicates that the 15-foot wide buffer is only proposed along the property line shared with Parcel F1. Please clarify that this is the only area proposed for the modification by labeling it as such.

Response: This is the only portion of the site where the buffer reduction is required. This has been reflected on Sheet 2 of the SPEX Plat.

Comment: Provide additional justification as to how the public purpose is to be exceeded with this modification request.

Response: The Applicant has revised Sheet 2 of the SPEX Plat to show this portion of the site being planted as a Type 3 buffer yard and not the Type 2 buffer required by the Zoning Ordinance.

Comment: Note that one of the issues for consideration in Section 6-1310(F) is whether there is sufficient existing or proposed landscaping, screening and buffering on the site and in the neighborhood to adequately screen surrounding uses. Please address whether the proposed buffer will adequately screen surrounding uses.

A93

Stephen Gardner, Planner
November 14, 2008
Page Ten

Response: Please see Sheet 3 of the SPEX Plat, which has been revised to include proposed landscaping. The Landscaping Plan indicates that substantial planting will be provided around the perimeter of the Property, which will screen the building from surrounding properties. As discussed above, this planting will be supplemented along the western boundary of the Property to provide additional screening. Further, the Applicant is proposing to locate the required play area at the southern edge of the Property, closest to the majority of surrounding residential properties. This play area will be surrounded by a 6 foot high opaque fence, with landscaping provided on the outside of the fence. This will provide additional screening from surrounding uses.

In addition to the proposed opaque fence, further screening will be provided along the eastern edge of the Property by existing vegetation in the area of open space owned by the Ashbrook HOA, which separates residential lots from the application Property.

The Applicant is proposing landscape islands throughout the parking lot, which, along with perimeter plantings, will help screen parking areas.

Comment: Provide further justification per Section 6-1310(E) whether the proposed use is compatible with other existing or proposed uses in the neighborhood, and adjacent parcels and provide justification per Section 6-1310(C) whether the level and impact of any noise emanating from the site, including that generated by the proposed use, negatively impacts the uses in the immediate area in relationship to reduction of buffer width. If there is an impact, are any improvements proposed to reduce the impacts and exceed the public purpose?

Response: The Zoning Ordinance confirms at Section 4-104(B) that childcare facilities are a by-right use in PD-H districts, such as that surrounding the Property to the south, east and west. The proposed use is therefore considered by the Zoning Ordinance to be compatible with residential dwellings. Further, other similar uses permitted by-right in the PD-H district include public schools, neighborhood and community parks and non-commercial recreational facilities.

As discussed above, the Applicant has discussed the proposed layout with residents of the surrounding Ashbrook HOA. During these meetings, residents confirmed that they would prefer the play area to be located closer to their homes, rather than parking spaces. Like the residents, the Applicant does not anticipate noise impacts from the proposed use.

Comment: This modification was previously approved, per ZMOD-2005-0007; however, the layout of the site has been modified so the modification should be restated and confirmed.

Response: Please see the enclosed Statement of Justification, which has been revised to provide additional justification for the proposed ZMOD.

Comment: The Statement of Justification indicates that the parking yard reduction is only requested on the east and west sides of the lot. Please label on the Special Exception Plat the specific area for which the modification is requested.

A94

Stephen Gardner, Planner
November 14, 2008
Page Eleven

Response: The parking yard reduction is only requested along a portion of the western Property boundary. This has been reflected on the SPEX Plat.

Comment: The Statement of Justification indicates that the building yard reduction is only requested on the eastern side of the lot. Please label on the Special Exception Plat the specific area for which the modification is requested.

Response: Comment acknowledged. Please see the revised SPEX Plat.

Comment: In relationship to the request to reduce the required building and parking yard setbacks, address the issues of consideration in Section 6-1310(E) as to whether the proposed use is compatible with other existing or proposed uses in the neighborhood, and adjacent parcel and in Section 6-1310(C) as to whether the level and impact of any noise emanating from the site, including that generated by the proposed use, negatively impacts the uses in the immediate area in relationship to the reduction of require building, and parking yard setbacks. If there is an impact, are any improvements proposed to reduce the impacts and exceed the public purpose?

Response: The Zoning Ordinance confirms at Section 4-104(B) that childcare facilities are a by-right use in PD-H districts, such as that surrounding the Property to the south, east and west. The proposed use is, therefore, considered by the Zoning Ordinance to be compatible with residential dwellings. Further, other similar uses permitted by-right in the PD-H district include public schools, neighborhood and community parks and non-commercial recreational facilities.

As discussed above, the Applicant has discussed the proposed layout with residents of the surrounding Ashbrook HOA. During these meetings, residents confirmed that they would prefer the proposed play area to be located closer to their homes, rather than parking spaces. Like the residents, the Applicant does not anticipate noise impacts from the proposed use.

The Applicant does not anticipate noise impacts from the proposed childcare building and is proposing a 6 foot high opaque fence to help mitigate any noise emanating from the associated play area. The Applicant is seeking to modify the Zoning Ordinance to reduce the parking setback on the western edge of the Property, but as the Property adjoins open space, parking space will be approximately 40 feet from the closest residential lot and 75 feet from the closest residential unit. Furthermore, the Applicant is proposing additional landscaping along the western boundary of the Property, which will further reduce the potential for noise impacts from vehicles.

Comment: Staff notes that a Special Exception (SPEX-2005-0005) was approved March 21, 2006, and the fact that the project was approved based on the Applicant's willingness to substantially reduce the size of the project from the original request. The Applicant is now requesting a 3,200 square foot increase from the previously approved Special Exception request.

A-95

Stephen Gardner, Planner
November 14, 2008
Page Twelve

Response: The Applicant is aware of the details concerning the existing approval on the Property. The existing approval received significant objections from the surrounding HOA and concerns from the Planning Commission and Board of Supervisors over the number of children proposed to be accommodated and issues relating to traffic generation and the location, design and layout of the childcare center. In response to these objections, the Applicant agreed to reduce the size of the proposed center from 13,861 square feet and reduce the number of children accommodated by the center from 250 to 200.

The Applicant is proposing a one-story building totaling 13,168 square feet and is not seeking to increase the maximum enrollment above 200 children. Unlike many other childcare programs, The Compass School offers a project-based approach to education, inspired by the Reggio method of educating the very young. The curriculum focuses more on encouraging children to question, discover, test and exhibit ideas rather than providing them with specific answers and incorporates student's interests and curiosity in lesson planning. Unlike the layout of the approved building at the Property, the Compass curriculum incorporates rooms specific to its program.

As shown on Sheet 2 of the SPEX Plat, the building will be located along the Property's eastern boundary, with parking to the north and west and a play area to the south. In determining the size and layout of the proposed facility, the Applicant has arranged a number of meetings with residents of the surrounding Ashbrook community. These meetings have been well attended. At the meeting held on April 14, 2008, the surrounding community expressed their preference for the proposed SPEX amendment design, including increased square footage and revised site layout, over the existing SPEX approval.

Comment: Address the issue of consideration of Section 6-1310(F) as to whether there is sufficient existing or proposed landscaping, screening and buffering on the site and in the neighborhood to adequately screen surrounding uses from reduced building and parking yard setbacks.

Response: Please see Sheet 3 of the SPEX Plat, which has been revised to include proposed landscaping. The Landscaping Plan shows that substantial planting will be provided around the perimeter of the Property, which will provide the screening of the building from surrounding properties. As discussed above, this planting will be supplemented along the western boundary of the Property to provide additional screening. Further, the Applicant is proposing to locate the required play area at the southern edge of the Property, closest to the majority of surrounding residential properties. This play area will be surrounded by a 6 foot high opaque fence, with landscaping provided on the outside of the fence. This will provide additional screening from surrounding uses.

In addition to the proposed opaque fence, further screening will be provided along the eastern edge of the Property by existing vegetation in the area of open space owned by the Ashbrook HOA, which separates residential lots from the application Property.

A.96



Stephen Gardner, Planner
November 14, 2008
Page Thirteen

The Applicant is proposing landscape islands throughout the parking lot, which, along with perimeter plantings, will help screen parking areas.

Fire, Rescue & Emergency Management

Comment: No outstanding issues.

Response: Comment acknowledged and appreciated.
Office of Transportation Services (OTS)

Comment: Transportation related conditions for this application should be the same as for the currently approved SPEX. This includes the location of the site entrance on Navajo Drive. This entrance location was a major issue in the consideration of the current SPEX.

Response: Comment acknowledged and appreciated.

I trust that this letter addresses the various issues raised by Staff. Please contact me if you have any additional questions or need any additional information.

Sincerely,

A handwritten signature in cursive script that reads "Ben I. Wales".

Ben I. Wales, AICP

cc Lynne Geisz, Childcare Holdings, Inc.
Rohit Anand, Cubellis
Patricia Mao, Cubellis
Colleen Gillis Snow, Cooley Godward Kronish

381061 v1/RE

A-97

This page intentionally left blank.



MEMORANDUM

TO: Stephen Gardner Loudoun County
Art Smith Loudoun County
Rashid Siraj, P.E. VDOT

FROM: Tushar Awar, P.E.
Christopher Tacinelli, P.E.

DATE: October 10, 2008

SUBJECT: Response Letter for VDOT Comments
Ashbrook – Compass School
Loudoun County Application Number: SPEX 2008-0042

This document addresses the comments received from Virginia Department of Transportation (VDOT) dated September 9, 2008, on the Compass School Special Exception application. Each comment is presented in *italics* with the response in **bold** immediately following.

COMMENTS:

- 1) *The application has been reviewed under different names, i.e. Busy Kids (SPEX 2005-0005/ZMOD 2005-0007) and Patriot Learning Center (STPL 2006-0065); and should comply with all comments offered previously. This includes widening of existing Navajo Drive, provisions for 5' sidewalk and curb ramps at the proposed entrance. The applicant should refer back to all the previous plans and ensure that the proposed frontage improvements are reflected on this application also.*

Response by others.

- 2) *The projected traffic volume (ADT) for existing Russell Branch Parkway and Navajo Drive should be shown on the plan. It appears that turning lanes (right and left) may be warranted at the proposed entrance.*

The projected traffic volume (ADT) for existing Russell Branch Parkway and Navajo Drive is shown on the plan. Left and right turn lane warrant analysis was performed at the proposed entrance for the future conditions. The analysis reveals that a left and right turn lane is not warranted at the school entrance. The detailed turn lane warrant worksheets are shown on the next page.

Right Turn Lane Warrant Analysis (2-LANE)

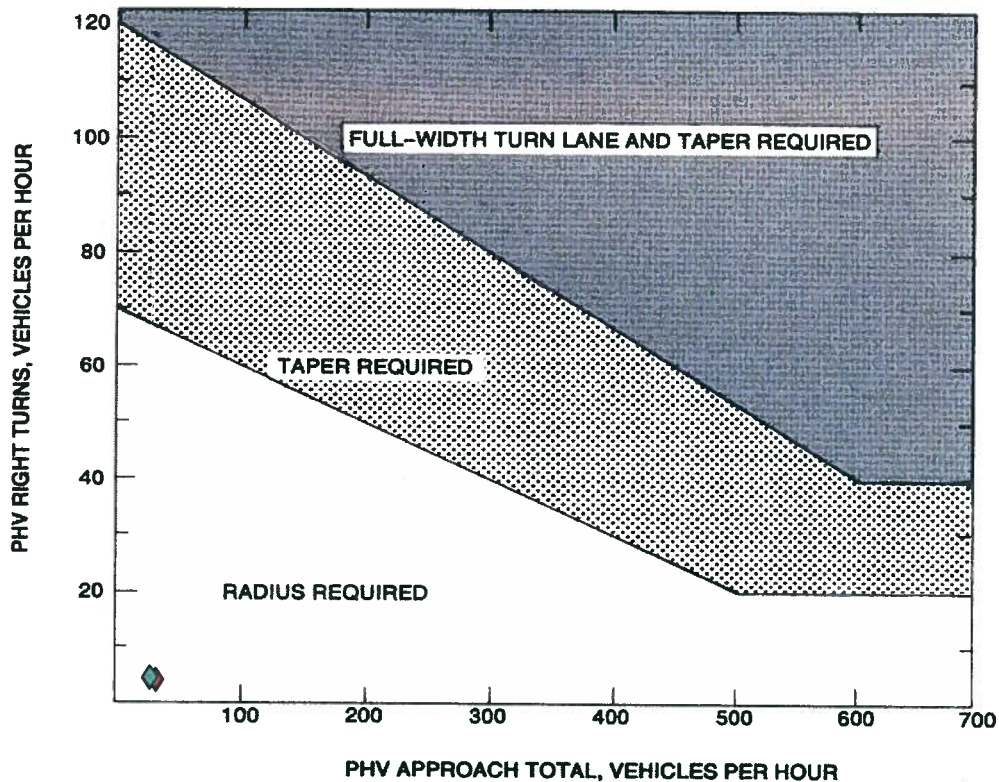
NAVAJO DRIVE AND FUTURE SITE ENTRANCE (2010- FUTURE CONDITIONS)

AM Peak Hour

Right Turn Volume = 4 veh/hour
Approach Volume = 32 veh/hour

PM Peak Hour

Right Turn Volume = 3 veh/hour
Approach Volume = 31 veh/hour



Right Turn Lane **Not Required**.

Left Turn Lane Warrant Analysis (2-LANE)

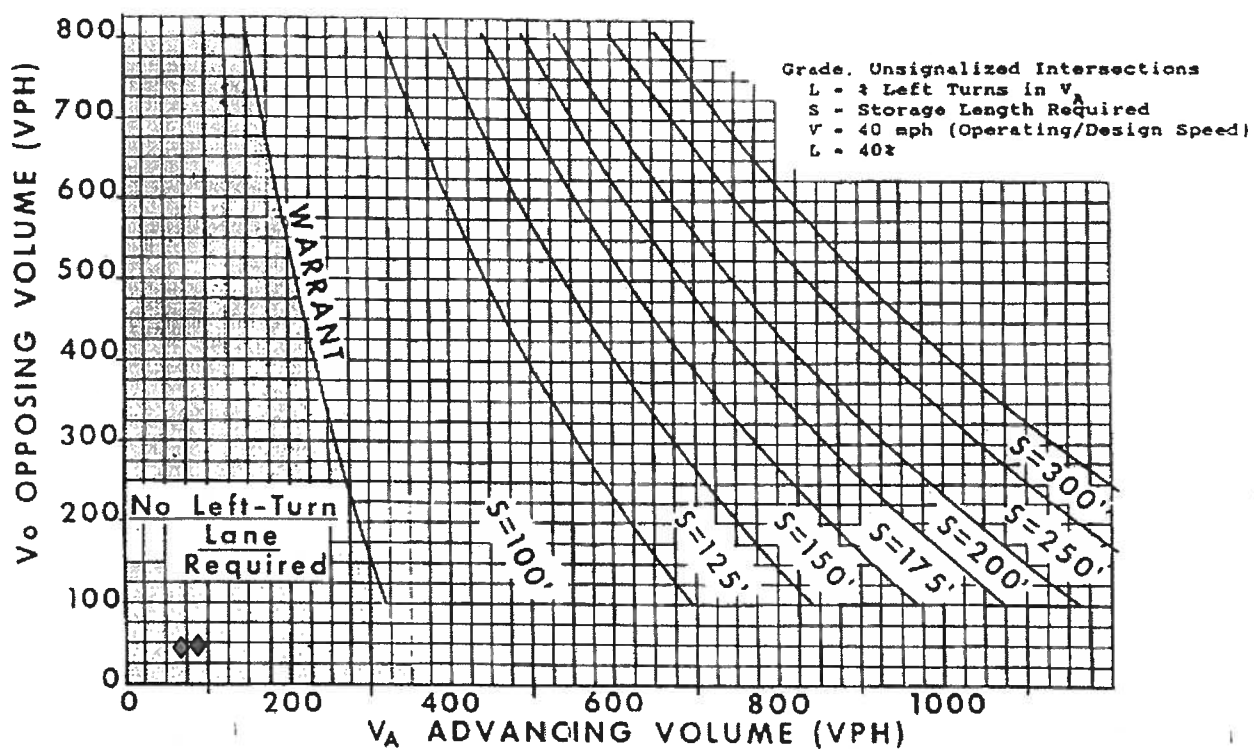
Intersection Name

AM Peak Hour

Left Turn Volume = **84** veh/hour
Advancing Volume = **96** veh/hour
Opposing Volume = **32** veh/hour

PM Peak Hour

Left Turn Volume = **51** veh/hour
Advancing Volume = **75** veh/hour
Opposing Volume = **31** veh/hour



Left Turn Lane **Not Required**.

- 3) *It also appears that the entrance is located too close to the intersection and should be moved as far back as possible to ensure adequate queuing entering the facility from Russell Branch Parkway during AM peak hours.*

The distance of the proposed entrance along Navajo Drive is approximately 150' from the intersection of Russel Branch Parkway and Navajo Drive (Edge of Pavement). The queuing analysis results for the future conditions (2010) show that there is minimal queuing at the entrances. The distance of the entrance from the intersection is appropriate to adequately handle traffic entering the proposed site entrance. The queuing analysis results are shown in the table below. The worksheets are attached at the back of the memorandum.

Table A: Queuing Analysis Results (2010)

Intersection (Approach/Movement)	AM Peak Hour		PM Peak Hour	
	Storage Length	95 th % Queue	Storage Length	95 th % Queue
Russell Branch Parkway and Navajo Drive Northbound	150'	51'	150'	26'
Navajo Drive and Site Entrance Westbound	N/A	6'	N/A	5'
Northbound	N/A	0'	N/A	0'
Southbound	150'	4'	150'	2'
N/A: Not Applicable				

WORKSHEETS

HCM Unsignalized Intersection Capacity Analysis 1: Russell Branch Pkwy & Navajo Dr

10/10/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4	4
Volume (veh/h)	29	888	73	23	220	13	74	3	26	17	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	29	888	73	23	220	13	74	3	26	17	0	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None	None	None	None	None	None	None	None	None	None	None	None
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
pX, conflicting volume	233			961			1107	1225	444	796	1285	110
VC1, stage 1 conf vol												
VC2, stage 2 conf vol	233			961			1107	1225	444	796	1285	110
VCu, unblocked vol	4.1			4.1			6.8	5.8	6.2	6.8	6.5	6.2
IC, single (s)												
IC, 2 stage (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
IF (s)	98			97			63	99	96	94	100	99
p0 queue free %	1332			712			197	216	615	298	155	943
p0 capacity (veh/h)												
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	NB 3	NB 4
Volume Total	29	444	444	73	23	110	110	13	103	22		
Volume Left	29	0	0	0	23	0	0	0	74	17		
Volume Right	0	0	0	73	0	0	0	13	26	5		
cSH	1332	1700	1700	1700	712	1700	1700	1700	239	353		
Volume to Capacity	0.02	0.26	0.26	0.04	0.03	0.06	0.06	0.01	0.43	0.06		
Queue Length 95th (ft)	2	0	0	0	3	0	0	0	0	51		
Control Delay (s)	7.8	0.0	0.0	0.0	10.2	0.0	0.0	0.0	31.0	15.9		
Lane LOS	A	B	B	B	D	D	D	D	C	C		
Approach Delay (s)	0.2				0.9				31.0	15.9		
Approach LOS					D				D	C		

Intersection Summary		
Average Delay	2.9	
Intersection Capacity Utilization	37.5%	
ICU Level of Service	A	
Analysis Period (min)	15	
User Entered Value		

HCM Unsignalized Intersection Capacity Analysis 5: Site Drive & Navajo Dr

10/10/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	4	4	4	4	4	4
Volume (veh/h)	4	74	28	4	84	12
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	4	74	28	4	84	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None	None	None	None	None	None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
pX, conflicting volume	210	30			32	
VC1, stage 1 conf vol						
VC2, stage 2 conf vol	210	30			32	
VCu, unblocked vol	6.4	6.2			4.1	
IC, single (s)						
IC, 2 stage (s)	3.5	3.3			2.2	
IF (s)	99	93			95	
p0 queue free %	737	1044			1580	
p0 capacity (veh/h)						
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	78	32	96			
Volume Left	4	0	84			
Volume Right	74	4	0			
cSH	1023	1700	1580			
Volume to Capacity	0.08	0.02	0.05			
Queue Length 95th (ft)	6	0	4			
Control Delay (s)	8.8	0.0	6.5			
Lane LOS	A	A	A			
Approach Delay (s)	8.8	0.0	6.5			
Approach LOS	A					

Intersection Summary		
Average Delay	6.4	
Intersection Capacity Utilization	23.4%	ICU Level of Service
Analysis Period (min)	15	A

A.104

HCM Unsignalized Intersection Capacity Analysis 2: Russell Branch Pkwy & Navajo Dr

10/10/2008

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A
Volume (veh/h)	77	329	59	14	267	47	62	5	18	54	3	54
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	84	358	64	15	290	51	67	5	20	59	3	59
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
VC, conflicting volume	341			422			761	897	179	689	910	145
VC1, stage 1 conf vol												
VC2, stage 2 conf vol	341			422			761	897	179	689	910	145
VCu, unblocked vol	4.1			4.1			6.8	5.4	6.2	5.8	5.8	6.2
IC, single (s)												
IC, 2 stage (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
IF (s)	93			99			78	98	98	83	99	93
p0 queue free %												
CM capacity (veh/h)	1214			1134			300	339	664	346	302	902
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	NB 3	NB 4
Volume Total	84	179	179	64	15	145	145	51	92	121		
Volume Left	84	0	0	0	15	0	0	0	67	59		
Volume Right	0	0	0	64	0	0	0	51	20	59		
cSH	1214	1700	1700	1700	1134	1700	1700	350	492			
Volume to Capacity	0.07	0.11	0.11	0.04	0.01	0.09	0.09	0.03	0.26	0.25		
Queue Length 95th (ft)	6	0	0	0	1	0	0	0	26	24		
Control Delay (s)	6.2	0.0	0.0	0.0	8.2	0.0	0.0	0.0	18.9	14.7		
Lane LOS	A	A	A	A	A	A	A	A	C	B		
Approach Delay (s)	1.4			0.4					18.9	14.7		
Approach LOS									C	B		
Intersection Summary												
Average Delay					4.0							
Intersection Capacity Utilization					29.7%					A		
Analysis Period (min)					15							
* User Entered Value												

HCM Unsignalized Intersection Capacity Analysis 3: Site Drive & Navajo Drive

10/10/2008

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	4A	4A	4A	4A	4A	4A
Volume (veh/h)	3	57	28	3	51	24
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	57	28	3	51	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
VC, conflicting volume	156	30			31	
VC1, stage 1 conf vol						
VC2, stage 2 conf vol	156	30			31	
VCu, unblocked vol	6.4	6.2			4.1	
IC, single (s)						
IC, 2 stage (s)	3.5	3.3			2.2	
IF (s)	100	95			97	
p0 queue free %						
CM capacity (veh/h)	809	1045			1582	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	60	31	75			
Volume Left	3	0	51			
Volume Right	57	3	0			
cSH	1030	1700	1582			
Volume to Capacity	0.06	0.02	0.03			
Queue Length 95th (ft)	5	0	2			
Control Delay (s)	8.7	0.0	5.1			
Lane LOS	A	A	A			
Approach Delay (s)	8.7	0.0	5.1			
Approach LOS	A					
Intersection Summary						
Average Delay			5.4			
Intersection Capacity Utilization			21.1%			
Analysis Period (min)			15			
ICU Level of Service						
A						

A-105

This page intentionally left blank.